

II. REMARKS

Reconsideration and allowance of the subject application are respectfully requested.

The present application contains claims 1-7, 10-16, 31-46, and 48-56. Claims 1, 10, 31, 51, and 52 are independent.

Applicants have added new Claims 51-56 to afford themselves a scope of protection commensurate with the disclosure. The new claims are fully supported in the specification, and are believed to be allowable for the reasons to be developed below.

Amendment to the Claims

Claim 1 has been amended to be directed to a method of retrieving channel characteristics of a Digital Subscriber Line (DSL) channel having a plurality of bins, comprising the steps of: determining and storing on a per bin basis channel frequency response and noise measurements at a first end of the DSL channel at initialization; determining and storing a signal-to-noise measurement on a per bin basis at the first end of the DSL channel at show time; and retrieving the determined channel frequency response, noise and signal-to-noise measurements at a second end of the DSL channel. Support for the amendment may be found, at least, in paragraphs 27-31 of the present published application 20020176544. Claim 31 generally parallels claim 1.

Accordingly, Applicants have amended the claims 1, 3, 5-7, 10, 12, 14-16, 31, 33, 35-39, 40-44 and 49-50 to include the limitation of "DSL" to better define the present invention. Claims 39-40 and 42-43 have been amended to correct a typographical error.

Claims 51 and 52 are new claims. It should be apparent to a person skilled in the art that the measurements are, as described in the description, "are available from both ends of the loop during active operation of the service" (paragraph 27, lines 5-6 of the present published application 20020176544).

The claims have been amended to a scope commensurate with the support of the specification. No new matter has been introduced by way of the amendment.

Claim Objection

Claim 47 has been canceled, thus rendering the Office's objection moot.

Rejection under 35 U.S.C §102

The Office rejected claims 1-7, 10-16, 31-43, and 47-50 under 35 U.S.C. §102 (e) as being anticipated by Murphy et al., (U.S. Patent No. 6,628,754), hereinafter referred to as Murphy.

The present claimed invention is directed to a method for retrieving channel characteristics of a DSL channel. The method comprises the steps of determining and storing on a per bin basis channel frequency response and noise measurements at a first end of the DSL channel; determining and storing a signal-to-noise measurement on a per bin basis at the first end of the DSL channel; and retrieving the stored channel frequency response, noise and signal-to-noise measurements at a second end of the DSL channel. (Emphasis added) Claims 10 and 31 are directed to an apparatus and a storage medium readable by a computer, and generally parallel claim 1.

Murphy discusses the exchange of "transmitter settings" between the modem and the ATU, the modem 26 determines the frequency response of the customer loop 22. See Column 6, lines 1 to 16 and column 13, lines 38 to 61 of Murphy. For example, Murphy at column 6, lines 4 to 6 states that the transmitter settings are "the number of bits and relative power levels that are to be used on each DMT subcarrier".

Applicants respectfully submit that although the transmitter settings exchanged by Murphy are derived from the measurements, they are different from the measurements themselves. The Applicants send the frequency response, noise and SNR measurements because these data are used to diagnose customer loop problems. See paragraph 29, 45, 46 and 51 of the present published application 20020176544. Transmitter settings are not adequate for accurate diagnosis of loop problems.

Murphy sends the settings for configuring the CO end ATU and the CPE end modem for optimal transmission. The present invention is concerned with the problem of how to diagnose customer loop problems, see paragraph 27, line 4 and paragraph 29, line 9 of the present published application 20020176544; while Murphy provides no suggestion on how to diagnose customer loop problems, no suggestion that the frequency response, noise and SNR be communicated to the other end. In Murphy, these measurements are processed locally to arrive at transmitter settings which are then communicated to the other end.

In order to properly anticipate Applicants' claimed invention under 35 U.S.C. §102, each and every element of the claimed invention must be found, either expressly described or under principles of inherency, in a single prior art reference. Murphy fails to meet this

requirement, and provides no teaching that would have suggested the desirability of modification to include such elements. Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in ... the claim." See M.P.E.P. §2131 (8th Ed., Rev. 3, Aug. 2005), quoting Richardson v. Suzuki Motor Co., 868 F.2d 1126,1236,9 U.S.P.Q. 2d 191 3, 1920 (Fed. Cir. 1989). Finally, "[t]he elements must be arranged as required by the claim." § 2131 (8th Ed., 2005), p. 2100-76.

Applicants respectfully submit that the dependent claims are novel and inventive at least by virtue of their dependencies, and further distinguish the present invention. For example, claims 39, 40, 42 and 43 include respective limitations of channel frequency response, and noise measurement that are referred to the tip and ring of a copper loop; claims 44-46 include the limitation of analyzing time dependent changes in cross talk levels and line attenuation at the second end of the DSL channel. Murphy does not need to isolate the characteristics of the customer loop from the modem and ATU characteristics because Murphy is setting up a communication channel between the ATU and modem which includes the modem and ATU characteristics. In contrast, the Applicants value isolation of the customer loop characteristics from the modem and ATU characteristics because the Applicants aim to diagnose customer loop problems.

Applicants respectfully submit that the other rejections to the claims do not, therefore, need to be addressed individually at this time. It will be appreciated, however, that this should not be construed as Applicants acquiescing to any of the purported teachings or assertions made regarding the cited art or the pending application.

Applicants respectfully request the withdrawal of the rejections under 35 U.S.C. §102(e).

Rejections under 35 U.S.C. 103 (a)

The Office rejected claims 44-46 under 35 U.S.C. 103 (a) as being unpatentable over Murphy in view of Zuranski (U.S. Patent No. 6,263,077), hereinafter referred to as Zuranski.

As discussed above, Murphy does not teach or suggest the transmission of the measurement to the other end.

Zuranski does not overcome the deficiencies of Murphy.

Applicants uphold that Zuranski utilizes echo cancellation to reduce near-end cross-talk noise. The analyzer of Zuranski is used "to obtain co-efficients for a preequalization filter"

at the transmitter, not for "analyzing time dependent changes in cross talk levels and line attenuation" as claimed by the present invention.

Furthermore, there is no teaching or suggestion in the references or prior art in general that would lead one of skill in the art to combine the teachings of Murphy with Zuranski .

Applicants reiterate that before references may be combined to render a claimed invention obvious, there must be some suggestion or motivation found in the art to make the combination. *In re Dance*, 160 F.3d 1339, 1343 (Fed. Cir. 1998). "It is insufficient to establish obviousness that the separate elements of the invention existed in the prior art, absent some teaching or suggestion, in the prior art, to combine the elements." *Arkie Lures, Inc. v. Gene Larew Tackle, Inc.*, 119 F.3d 953, 957 (Fed. Cir. 1997). Moreover, the fact that references can be combined is insufficient to meet this criterion. *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). Similarly, the fact that the combination would be well within the ordinary skill in the art, by itself, is insufficient to meet this criterion. *AI-Site Corp. v. VSI Intern., Inc.*, 174 F.3d 1308, 1324 (Fed. Cir. 1999).

For at least these reasons, the Office has failed to establish a *prima facie* case for non-patentability.

Applicants respectfully request the withdrawal of the rejections under 35 U.S.C. §103(a).

Applicant respectfully requests reconsideration of this application, based on the foregoing amendments and remarks.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 625-3507. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

/Richard P. Bauer/

Attorney for Applicants

Richard P. Bauer

Registration No. 31,588

PATENT ADMINISTRATOR
KATTEN MUCHIN ROSENMAN LLP
1025 THOMAS JEFFERSON STREET, N.W. EAST LOBBY: SUITE 700
WASHINGTON DC 20007-5201